

Appl. No. 10/809,384
Amendment dated: February 6, 2006
Reply to OA of: March 14, 2005

specifically traverse this rejection as failing to meet the basic requirements for a prima facie case of obviousness.

Applicants wish to direct the Examiner's attention to the basic requirements of a prima facie case of obviousness as set forth in the MPEP § 2143. This section states that to establish a prima facie case of obviousness, three basic criteria first must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Section 2143.03 states that all claim limitations must be taught or suggested by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious. In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

Section 2143.01 states that if the proposed modification would render the prior art invention being modified unsatisfactory for intended purpose, then there is no suggestion or motivation to make the proposed modification.

Applicants respectfully assert that the proposed modification of Nakamura with the teaching of Yano would render the prior art invention being modified unsatisfactory for its intended purpose. The Official Action suggests modifying Nakamura by replacing the power supply electrodes 3a located in the central area with solder ball electrodes having no electrically conductive function. Clearly, such a modification would render the invention disclosed in Nakamura useless, as the power supply electrodes would be removed. By replacing the power supply electrodes, which require electrical

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conductivity to serve their intended purpose, with non-electrically conductive electrodes as taught by Yano, the invention of Nakamura will clearly fail to properly function. Because this proposed modification will clearly render the prior art invention unsatisfactory for its intended purpose, Applicants respectfully assert that a proper §103(a) obviousness rejection has not been established according to the guidelines set forth in MPEP §2143 and should therefore be withdrawn.

Even assuming that the proposed modification set forth in the Official Action suggests placing the non-electrically conductive solder bumps as taught in Yano amongst the power supply electrodes disclosed in Nakamura, this modification would not meet every limitation of the present claims. Specifically, claim 1 of the present application recites a plurality of electrically conductive bumps connecting the first peripheral area and the second peripheral area while the reinforced bumps have no electrically conductive function and connect the first central area and the second central area. That is to say, the present application claims a configuration wherein the non-electrically conductive reinforced bumps are located only in the central area and the electrically conductive bumps are located only in the periphery area. In the modification proposed by the Official Action, non-electrically conductive bumps would be dispersed in the central area amongst electrically conductive bump. Therefore, this modification would not meet every element of the presently recited claims and therefore would fail to establish a proper §103(a) rejection according to the guidelines set forth in MPEP §2143. Accordingly, Applicants respectfully request that this rejection be withdrawn.

Because all of the claims are rejected on the basis of a combination of Nakamura and Yano, and because these references, either standing alone or in combination, fail to establish a prima facie case of obviousness, Applicants respectfully submit that all of the §103(a) rejections should be withdrawn and that the present claims are clearly allowable over the references of record.

Applicants also note that while the present claims recite that the electrically conductive bumps and the reinforced bumps are located between the substrate and the chip of the flip chip package, neither the Nakamura reference nor the Yano reference

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disclose bumps located between the substrate and the chip. Nakamura discloses solder balls 29 disposed between the substrate 13 and the printed board 15, while Yano discloses solder balls disposed between package 1 and the mounting substrate 5. Because neither reference discloses bumps disposed between the substrate and the chip as recited in the claims of the present invention, Applicants respectfully submit that a proper §103(a) rejection has not been established. Accordingly, it is respectfully requested that this rejection be withdrawn.

With respect to the §103(a) rejection of claims 6-9, 15 and 16, Applicants note that the Official Action relies upon the Figure 5 of Nakamura and Figure 4 as disclosing the width between the outermost reinforced bump and the innermost electrically conductive bump and the width of the intermediate area. Applicants note that neither reference makes an explicit disclosure in the specification as to the width between the areas. That is to say, there is no express statement in either reference that the distance is equal to or double the width of the bumps. Rather, the Official Action appears to rely on the distances shown in the Figures and a rough approximation of what these distances equal. Applicants specifically traverse these rejections on the grounds that the Figures of the prior art have been improperly used to support the rejections.

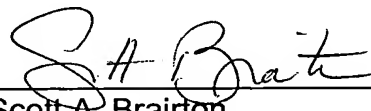
When the reference does not disclose that the drawings are to scale and is silent as to dimensions, arguments based on measurement of the drawing features are of little value. See *Hockerson-Halberstadt, Inc. v. Avia Group Int'l*, 222 F.3d 951, 956, 55 USPQ2d 1487, 1491 (Fed. Cir. 2000). Therefore, without an explicit statement in either Nakamura or Barrow that the dimensions shown in the Figures are that asserted in the Official Action (i.e., at least larger than double the width of the electrically conductive bump, at least larger than a diameter or the electrically conductive bump, etc.), Applicants respectfully submit that the Official Action has failed to establish a prima facie case of obviousness according to the guidelines set forth in MPEP §2143. Because the references do not clearly and explicitly disclose the dimensions claimed in the present application, the rejection fails to disclose or suggest every element of the presently recited claims and should therefore be withdrawn.

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In view of the above comments, favorable reconsideration and allowance of all of the claims now present in the application are most respectfully requested.

Respectfully submitted,

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